### **REMARKS**

In view of the above amendments and the following remarks, reconsideration and further examination are respectfully requested.

### I. Information Disclosure Statement

Item 5 of the Office Action indicates that reference "AO" of the FORM PTO 1449 filed on September 26, 2006 was not considered because a publication date was not included in the description of the reference.

As discussed on the telephone with Examiner Nofal, a publication date <u>is</u> included in the description of reference "AO." However, the publication date is described in Japanese date format. Specifically, it is respectfully submitted that the phrase "Heisei 7 Nen 2 Gatsu 18 Nichi actually indicates a publication date of February 18, 1995. Support for the date translation is included in the attached document. More specifically, Heisei 7 Nen represents the seventh year of Emperor Heisei, which is 1995, 2 Gatsu represents February, and 18 Nichi represents the 18<sup>th</sup> day.

Thus, it is respectfully submitted that the publication date of February 18, 1995 is included in the description of reference "AO," and consideration of reference "AO" is respectfully requested.

### II. Objection to the Specification and Abstract

The specification and abstract have been reviewed and revised to improve their English

grammar as well as address the informalities identified on pages 3 and 4 of the Office Action. Specifically, as requested in the objection of the abstract, the abstract is now limited to 1 paragraph and 150 words or less. In addition, as request in the objection of the specification, the specification has been amended to clarify the terminology "information recording medium." Specifically, the specification has been amended to clarify that a computer-readable recording medium is an example of an information recording medium. Therefore, withdrawal of these objections is respectfully requested.

The amendments to the specification and abstract have been incorporated into a substitute specification and abstract. Attached are two versions of the substitute specification and abstract, a marked-up version showing the revisions, as well as a clean version. No new matter has been added.

### III. Objection the Drawings

Figures 1-4 were objected to for not being identified as prior art. As mentioned above, proposed drawing amendments are submitted herewith under a separate cover letter.

Specifically figures 1-4 have been amended to be identified as prior art. Thus, withdrawal of the above-mentioned objection is respectfully requested. In addition, figure 17 has been amended to replace the Japanese text with the term "Decoder."

These drawing amendments are editorial in nature and do not add new matter to the application.

### IV. Informalities

Claim 5 was objected in view of various informalities identified on page 4 of the Office Action. Withdrawal of this objection is respectfully submitted since claim 5 has been amended to resolve the problems identified by the Examiner.

### V. 35 U.S.C. § 101 Rejection of Claims 1-5

Claims 1-5 were rejected under 35 U.S.C. § 101 for reciting a "multiplexer," which is allegedly non-statutory subject matter. Claims 1-5 have been amended to recite a "multiplexing apparatus," in order to clarify that the claimed invention is directed to an apparatus/machine.

Thus, withdrawal of this 35 U.S.C. § 101 rejection is respectfully requested.

Claims 6 and 7 were rejected under 35 U.S.C. § 101 for reciting "an information recording medium," for which the specification allegedly provides no antecedent basis. Claims 6 and 7 have been amended to recite a computer-readable recording medium having data recorded thereon. More specifically, claims 6 and 7 now recite that the computer-readable recording medium requires a structure having a specific type of data being recorded thereon. As mentioned above, the specification has also been amended to identify that a computer-readable recording medium is an example of an information recording medium. Therefore, claims 6 and 7 now recite statutory subject matter and, as a result, withdrawal of the above-mentioned rejection is respectfully requested.

Claim 12 was rejected under 35 U.S.C. § 101 for being directed to software alone. Claim 12 has been amended to recite a computer-readable recording medium having a program

recorded thereon, wherein the program causes a computer to execute a specific method.

Therefore, claim 12 is now directed to statutory subject matter and, as a result, withdrawal of this rejection is respectfully requested.

### VI. 35 U.S.C. § 103(a) Rejection of Claims 1-4, 6, 11 and 12

Claims 1-4, 6, 11 and 12 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the admitted prior art in view of Bachman (U.S. 4,068,300), Tiernan et al. (U.S. 6,172,988), or Goudie et al. (U.S. 2002/0129213).

Initially, it is noted that claims 1, 3-7, 11 and 12 have been amended to make a number of editorial revisions thereto. These editorial revisions have been made to place the claims in better U.S. form. Further, these editorial revisions have not been made to narrow the scope of protection of the claims, or to address issues related to patentability, and therefore, these amendments should not be construed as limiting the scope of equivalents of the claimed features offered by the Doctrine of Equivalents.

Claims 2, 8-10, 13 and 14 have been cancelled without prejudice or disclaimer of the subject matter contained therein. Further, independent claims 1, 6 and 11 have been amended to clarify features of the invention recited therein and to further distinguish the present invention from the references relied upon in the above-mentioned rejection. Thus, the above-mentioned rejection is believed clearly inapplicable to amended independent claims 1, 6 and 11 and the claims that depend therefrom for the reasons discussed below.

Amended independent claim 1 recites a multiplexing apparatus including (1) a subdescriptor generating unit operable to generate sub-descriptors, each sub-descriptor including
side information and including a sub-tag value representing a type of the side information. In
addition, claim 1 recites that the multiplexing apparatus includes (2) a main descriptor generating
unit operable to generate a main descriptor including the generated sub-descriptors, and including
a main tag value representing a set of the sub-descriptors. Further, claim 1 recites that the
multiplexing apparatus includes (3) a table generating unit operable to generate table data by
associating the generated main descriptor with a packet identifier of the coded data. Claim 1 also
recites that (4) the sub-descriptor generating unit is operable to sort and output the subdescriptors in an order such that the sub-descriptors are arranged in the main descriptor in an
ascending order according to the sub-tag value of each sub-descriptor, wherein each sub-tag
value is a natural number.

The above described structure will allow a decoder for decoding video or audio data to reliably and efficiently analyze the side information because the decoder can identify and analyze the sub-descriptors including the side information in the ascending order based on the sub-tag values.

Applicants admitted prior art, Bachman, Tiernan and Goudie, or any combination thereof, fail to disclose or suggest above-mentioned distinguishing features (1)-(4) as recited in independent claim 1 and fails to disclose or suggest the above-identified result of the structure required by independent claim 1.

Initially, please note that the above-described 35 U.S.C. § 103(a) relies on Applicants admitted prior art for teaching the above-described main descriptor generating unit and the table generating unit, and relies on Bachman, Tiernan and Goudie for each teaching the above-described sub-descriptor generating unit, as recited in claim 1.

However, Applicants admitted prior art merely teaches a descriptor generating unit 901 that generates a descriptor and a table generation unit 902 that generates a program map table including the generated descriptor (see paragraph [0018] and Fig. 4). Based on this configuration the table generation unit 902 is merely configured to generate a map table including a descriptor.

Thus, in view of the above, and as acknowledged by the Examiner, Applicants admitted prior art fails to disclose or suggest the sub-descriptor generating unit, as required by claim 1.

In addition, in view of the above, it is clear that Applicants admitted prior art merely teaches that the table generation unit 902 generates a map table including a descriptor, but fails to disclose or suggest the table generating unit operable to generate table data by associating the generated main descriptor (including the generated sub-descriptors, and including a main tag value representing a set of the sub-descriptors) with a packet identifier of the coded data, as required by claim 1. In other words, the Applicants' admitted prior art's disclosure of a table generation unit, which generates a table based on a descriptor (not including sub-descriptors or a main tag value representing the sub-descriptors) is not a disclosure or suggestion of the table generating unit that associates the main descriptor including sub-descriptors and the main tag value representing the sub-descriptors with the packet identifier, as required by claim 1.

Thus, even if Bachman, Tiernan or Goudie were to disclose the features of the sub-descriptor generating unit, as recited in claim 1, the table data generating unit 902 of the admitted prior art still fails to disclose or suggest the table generation unit that receives the main descriptor including sub-descriptors and the main tag value representing the sub-descriptors, as required by claim 1.

However, regarding Bachman, which was relied upon for teaching the sub-descriptor generating unit, as recited in claim 1, it is evident that Bachman teaches associating files with file descriptors that identify file numbers and page numbers of a respective file, associating logical records with record descriptors, and associating logical fields with field descriptors (see col. 5, lines 51-60).

Thus, in view of the above, it is apparent that Bachman merely teaches that files, records and fields are associated with descriptors, but fails to disclose or suggest generating subdescriptors, each including side information and a sub-tag value representing a type of the side information, as required by claim 1.

In addition, it is clear that Bachman merely teaches using descriptors, but fails to disclose or suggest sub-descriptors <u>used by a table generating unit</u> that associates the main descriptor <u>including sub-descriptors and the main tag value</u> with the packet identifier, as required by claim 1.

Moreover, Bachman merely teaches using descriptors to describe information, but fails to disclose or suggest that sub-descriptor generating unit sorts and outputs the sub-descriptors in an order such that the sub-descriptors are arranged in the main descriptor in an ascending order

according to the sub-tag value of each sub-descriptor, wherein each sub-tag value is a natural number, as required by claim 1.

Regarding Tiernan, which was relied upon for teaching the sub-descriptor generating unit, as recited in claim 1, it is evident that Tiernan teaches that each descriptor is identified by a value of a descriptor-tag field (see col. 15, lines 12-29).

However, Tiernan's disclosure of a descriptor being identified by a value of a field is not a disclosure or suggestion of: (i) generating sub-descriptors, each including side information and a sub-tag value representing a type of the side information, as required by claim 1; (ii) sub-descriptors used by a table generating unit that associates the main descriptor including sub-descriptors and the main tag value with the packet identifier, as required by claim 1; or (iii) sorting and outputting the sub-descriptors in an order such that the sub-descriptors are arranged in the main descriptor in an ascending order according to the sub-tag value of each sub-descriptor, wherein each sub-tag value is a natural number, as required by claim 1.

Regarding Goudie, which was relied upon for teaching the sub-descriptor generating unit, as recited in claim 1, it is evident that Goudie teaches a read descriptor and a write sub-descriptor for storing data in a queue (see paragraph [0052]).

However, Goudie also fails to disclose or suggest: (i) generating sub-descriptors, each including side information and a sub-tag value representing a type of the side information, as required by claim 1; (ii) sub-descriptors <u>used</u> by a table generating unit that associates the main descriptor <u>including sub-descriptors</u> and the <u>main tag value</u> with the packet identifier, as required by claim 1; or (iii) sorting and outputting the sub-descriptors <u>in an order such that the sub-</u>

<u>value of each sub-descriptor</u>, wherein each sub-tag value is a natural number, as required by claim 1.

Therefore, because of the above-mentioned distinctions it is believed clear that claim 1 and claims 3-5 that depend therefrom would not have been obvious or result from any combination of Applicants admitted prior art, Bachman, Tiernan and/or Goudie.

In addition, it is noted that no obvious combination of Applicants admitted prior art,

Bachman, Tiernan and/or Goudie would result in a structure allowing a decoder for decoding

video or audio data to reliably and efficiently analyze the side information because the decoder

can identify and analyze the sub-descriptors including the side information in the ascending order

based on the sub-tag values, as described above regarding claim 1.

For the reasons discussed above there is no disclosure or suggestion in Applicants admitted prior art, Bachman, Tiernan and/or Goudie or elsewhere in the prior art of record which would have caused a person of ordinary skill in the art to modify Applicants admitted prior art, Bachman, Tiernan and/or Goudie to obtain the invention of independent claim 1. Accordingly, it is respectfully submitted that independent claim 1 and claims 3-5 that depend therefrom are clearly allowable over the prior art of record.

Amended independent claims 6 and 11 are directed to a computer-readable recording medium and a method, respectively and each recite features that correspond to the above-mentioned distinguishing features of independent claim 1. Thus, for the same reasons discussed above, it is respectfully submitted that independent claims 6 and 11 and claims 7 and 12 that

depend therefrom are allowable over Applicants admitted prior art, Bachman, Tiernan and Goudie.

## VII. 35 U.S.C. § 103(a) Rejection of Claims 5 and 7

Dependent claims 5 and 7 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the above-identified references in view of Takahashi et al. (U.S. 6,449,352).

However, as discussed above, Applicants admitted prior art, Bachman, Tiernan and Goudie do not disclose or suggest the invention recited in independent claims 1 and 6. Claims 5 and 7 depend on claims 1 and 6, respectively. Therefore, Takahashi also does not disclose or suggest the invention recited in claim 5 and 7. Thus, at least, due to their dependence on claims 1 and 6, claims 5 and 7 would not have been obvious in view of Applicants admitted prior art, Bachman, Tiernan, Goudie and Takahashi.

### VIII. Conclusion

In view of the above amendments and remarks, it is submitted that the present application is now in condition for allowance and an early notification thereof is earnestly requested. The Examiner is invited to contact the undersigned by telephone to resolve any remaining issues.

Respectfully submitted,

Yoshinori MATSUI et al.

/Andrew L. Dunlap/

By: 2008.10.02 13:48:24 -04'00'

Andrew L. Dunlap Registration No. 60,554 Attorney for Applicants

ALD/led Washington, D.C. 20006-1021 Telephone (202) 721-8200 Facsimile (202) 721-8250 October 2, 2008

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### **Japanese Date Conversion**

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Meiji 33	1900	Showa 9	1934	Showa 43	1968
Meiji 34	1901	Showa 10	1935	Showa 44	1969
Meiji 35	1902	Showa 11	1936	Showa 45	1970
Meiji 36	1903	Showa 12	1937	Showa 46	1971
Meiji 37	1904	Showa 13	1938	Showa 47	1972
Meiji 38	1905	Showa 14	1939	Showa 48	1973
Meiji 39	1906	Showa 15	1940	Showa 49	1974
Meiji 40	1907	Showa 16	1941	Showa 50	1975
Meiji 41	1908	Showa 17	1942	Showa 51	1976
Meiji 42	1909	Showa 18	1943	Showa 52	1977
Meiji 43	1910	Showa 19	1944	Showa 53	1978
Meiji 44	1911	Showa 20	1945	Showa 54	1979
Meiji 45 / Taisho 1	1912	Showa 21	1946	Showa 55	1980
Taisho 2	1913	Showa 22	1947	Showa 56	1981
Taisho 3	1914	Showa 23	1948	Showa 57	1982
Taisho 4	1915	Showa 24	1949	Showa 58	1983
Taisho 5	1916	Showa 25	1950	Showa 59	1984
Taisho 6	1917	Showa 26	1951	Showa 60	1985
Taisho 7	1918	Showa 27	1952	Showa 61	1986
Taisho 8	1919	Showa 28	1953	Showa 62	1987
Taisho 9	1920	Showa 29	1954	Showa 63	1988
Taisho 10	1921	Showa 30	1955	Showa 64 / Heisei 1	1989
Taisho 11	1922	Showa 31	1956	Heisei 2	1990
Taisho 12	1923	Showa 32	1957	Heisei 3	1991
Taisho 13	1924	Showa 33	1958	Heisei 4	1992
Taisho 14	1925	Showa 34	1959	Heisei 5	1993
Taisho 15 / Showa 1	1926	Showa 35	1960	Heisei 6	1994
Showa 2	1927	Showa 36	1961	Heisei 7	1995
Showa 3	1928	Showa 37	1962	Heisei 8	1996
Showa 4	1929	Showa 38	1963	Heisei 9	1997
Showa 5	1930	Showa 39	1964	Heisei 10	1998
Showa 6	1931	Showa 40	1965	Heisei 11	1999
Showa 7	1932	Showa 41	1966	Heisei 12	2000
Showa 8	1933	Showa 42	1967	Heisei 13	2001

# Japanese counter word

From Wikipedia, the free encyclopedia

In Japanese, counter words or counters (josūshi 助数詞) are used along with numbers to count things, actions, and events.

In Japanese, as in Chinese and Korean, numerals cannot quantify nouns by themselves (except, in certain cases, for the numbers from one to ten; see below). For example, to express the idea "two dogs" in Japanese one must say *inu nihiki* (犬二匹, literally "dog two-small-animal"). Here *inu* 犬 means "dog", ni = 1 is the number 2, and niki = 1 is the **counter** for small animals. The counters are not independent words and always appear with a number before them.

Counter words are similar in function to the word "sheet" in "two sheets of paper" or "cup" in "two cups of coffee", but in Japanese, (almost) all nouns require a counter. In this sense, all Japanese nouns are mass nouns. This grammatical feature can result in situations where one is unable to express the number of a particular object in a grammatically correct way because one does not know, or cannot remember, the appropriate counting word. The problem is partially solved for the numbers from one to ten by using the traditional numbers (see below) which can be used to quantify some nouns by themselves. For example, "four apples" is *ringo yonko* (リンゴ四個) where *ko* (個) is the counter), but can also be expressed using the traditional numeral four as *ringo yottsu* (リンゴ四つ). These traditional numerals cannot be used to count all nouns however; some, including people and animals, require the proper counter.

Counters can also be intentionally misused for humorous, sarcastic, or insulting effects. For example, one might say 男一匹なの に (Otoko ippiki nano ni; "I am only one man..."). Using the counter hiki (匹), the counter for small animals, humorously suggests that the person is overpowered by massive obstacles.

Some of the more common counters may be used instead of less common ones. For example, 匹 hiki (see below) is often used for all animals, regardless of size. However, many speakers will correct themselves and use the traditionally "correct" counter, 頭  $t\bar{o}$ , when speaking of, for example, horses.

Just as in English, different counters for the same thing can be used to convey different meanings. In English, one can say one loaf of bread or one slice of bread, and the referent is different. In Japanese, the same effect is made by saying パンー斤 pan ikkin, literally "bread one-loaf" versus パンー枚 pan ichimai, literally "bread one-flat piece".

### **Contents**

- 1 Table of the traditional numerals
- 2 List of counters
- 3 Euphonic changes
- 4 Exceptions
- 5 Ordinal numbers
- 6 Periods of time
- 7 See also
- 8 References

### Table of the traditional numerals

Numeral	Japanese	Pronunciation (romaji)	Pronunciation (hiragana)
1	->	hitotsu	ひとつ
2	= >	futatsu	ふたつ
3	三つ	mittsu	みっつ
4	四つ	yottsu	よっつ
5	五つ	itsutsu	いつつ
6	六つ	muttsu	むっつ
7	七つ	nanatsu	ななつ
ware the second			

8	八つ	yattsu	やっつ
9	九つ	kokonotsu	ここのつ
10	+	tō	とお
20	=+	hatachi (used for age)	はたち

## List of counters

This list also includes some counters and usages that are rarely used or not widely known.

Pronunciation	Japanese	Use
ba	場	Scene of a play
bai	倍	Multiples, -fold as in "twofold"
ban	晩	Nights (see also: ya)
ban	番	Sports matches
bi	尾	Small fish and shrimps (used in the fish trade; most people say hiki instead)
bu	部	Copies of a magazine or newspaper, or other packets of papers
bun	文	Sentences
byō	秒	Seconds
byōshi	拍子	Musical beats
chaku	着	Suits of clothing (see also: mai)
chō	挺	Guns, sticks of ink, palanquins, rickshaws, violins
chō	丁	Tools, scissors, saws, trousers, pistols, cakes of tofu, town blocks,
chō		Town blocks
dai	代	Generations, periods, reigns
dai	台	Cars, bicycles, machines, mechanical devices, household appliances
danraku	段落	Paragraphs
do, also tabi	度	Occurrences, number of times, degrees of temperature or angle (see also: kai).
fuku, puku	服	Bowls of matcha (powdered green tea); packets or doses of powdered medicine
fuku, puku	幅	Hanging scrolls (kakejiku)
fun, pun	分	Minutes
furi	振	Swords
gakkyū	学級	Classes (in pre-university education)
gatsu, also tsuki    A   Months of the year. Month-long periods when read tsuki (see also: kagetsu)		Months of the year. Month-long periods when read tsuki (see also: kagetsu)
go	語	Words
gon, also koto	Ē	Words
gu	具	Suits of armour, sets of furniture
gyō	行	Lines of text



haku	泊	Nights of a stay
hai	杯	Cups and glasses of drink, spoonfuls, cuttlefish, octopuses, crabs, squid, abalone, boats (slang)
hai	敗	Losses (sports bouts)
hari	張	Umbrellas, parasols, tents
hashira	柱	Gods, memorial tablets
hatsu, patsu	発	Gunshots, bullets, aerial fireworks
hiki, piki	匹	Small animals, insects, fish, reptiles, amphibians, oni (ogres)
hin, pin	Ga .	Parts of a meal, courses (see also: shina)
ho, po	歩	Number of (foot)steps
hon, pon,bon	本	Long, thin objects: rivers, roads, train tracks, ties, pencils, bottles, guitars; also, metaphorically, telephone calls, train or bus routes, movies (see also: $ts\bar{u}wa$ ), points or bounds in sports events. Although $\Phi$ also means "book", the counter for books is $satsu$ .
hyō	票	Votes
ji	字	Letters, kanji, kana
ji	児	Children. As in 'father of two (children)', etc.
ji	時	Hours of the day
jikan	時間	Hour-long periods
jō	4	Tatami mats. The kanji $\frac{1}{2}$ is also read <i>tatami</i> and is the same one used for the mats. The room size of a washitsu in Japan is given as a number of mats, for example $4\frac{1}{2}j\bar{o}$
jō	錠	Pills/capsules
ka	<b>E</b>	Day of the month
ka	架	Frames
ka	課	Lessons
kabu	株	Stocks; nursery trees
kagetsu	ケ月, 箇月	Month-long periods (see also: gatsu). 箇 is normally abbreviated using a small katakana ケ in modern Japanese. Alternatively 個, hiragana か, small katakana カ and full-size katakana カ & ケ can also be seen, although only か is similarly frequent.
kakoku	ヶ国, 箇国	Countries
kakokugo	ヶ国語, 箇 国語	(National) languages
kaku	B	Strokes in kanji
kai		Occurrences, number of times (see also: do)
kai	階	Number of floors, stories
kan	貫	Pieces of nigiri-zushi
kan	艦	Warships
ken	件	Abstract matters and cases
ken	軒	Houses

ki	機	Aircraft, machines				
ki	基	Graves, wreaths, CPUs, reactors, elevators, dams				
kire	切れ	Slices (of bread, cake, sashimi etc.)				
ko	個, 箇, 个, or ケ	General measure word, used when there is no specific counter. 個 is also used for military units.				
ko	戸	Houses (戸 means "door")				
kō	校	Schools				
kō	稿	Drafts of a manuscript				
kō	行	Banks				
koma	齣, コマ	Frames, panels. 齣 is virtually unused nowadays.				
ku	X	Sections, city districts				
ku	句	Haiku, senryū				
kuchi	П	(Bank) accounts, donations (☐ means "opening" or "entrance")				
kumi	組	Groups, a pair of people (twins, a husband and a wife, dancers, etc.)				
kurasu	クラス	School classes				
kyaku	脚	Desks, chairs, long-stemmed glasses				
kyaku	客	Pairs of cup and saucer				
kyoku	曲	Pieces of music				
kyoku	局	Board game matches (chess, Igo, Shogi, Mahjong); radio stations, television stations				
mai	枚	Thin, flat objects, sheets of paper, photographs, plates, articles of clothing (see also: chaku)				
maki or kan	巻	Rolls, scrolls, kan for volumes of book				
maku	幕	Theatrical acts				
mei	名	People (polite) (名 means "name")				
men	蕳	Mirrors, boards for board games (chess, Igo, Shogi), stages of computer games, walls of a room, tennis courts,				
mon	門	Cannons				
mon	問	Questions				
nen	年	Years, school years (grades); not years of age				
nichi	目	Days of the month (but see table of exceptions below)				
nin	人	People (but see table of exceptions below)				
ninmae	人前	Food portions (without exceptions, unlike nin above)				
pēji	ページ, 頁	Pages				
rei	礼	Bows during worship at a shrine				
rin	輪	Wheels, Flowers				
ryō	<u> </u>	Railway cars				
sai	才 or 歳	Years of age				



sao	棹	Chests of drawers, flags
satsu	₩	Books
seki	席	Seats, Rakugo shows, (drinking) parties
seki	隻	Ships
shina	品	Parts of a meal, courses (see also: hin)
sha	社	used for businesses, i.e. 会社
shiki	式	Sets of things, such as documents or furniture
shō	勝	Wins (sports bouts)
shu	首	Tankas
shū	週	Weeks
shurui or shu	種類 or 種	Kinds, species
soku	足	Pairs of footwear, pairs of socks, stockings, and tabis.
tai	体	Images, person's remains, dolls
tawara	俵	Bags of rice
teki	滴	Drops of liquid
ten	点	Points, dots
tō	頭	Large animals, cattle, elephants (頭 means "head")
tõri	通り	Combinations, puzzle solutions
tsū	通	Letters
tsūwa	通話	Telephone calls (see also: hon)
toki	時	Time periods, a sixth of either day or night (in the traditional, obsolete way of telling time). See also: jikan
tsubo	坪	Commonly used unit of area equal to 3.3 square metres.
wa	RF KF	Birds, rabbits* (because of their ears); 羽 means "feather" or "wing".
wa	把	Bundles
ya	夜	Nights (see also: ban')
zen	膳	Pairs of chopsticks; bowls of rice

# **Euphonic changes**

Systematic changes occur when particular numbers precede counters that begin with certain phonemes. For example, ichi - + k = ikk, roku + h = ropp. The details are listed in the table below.

These changes are followed fairly consistently but exceptions and variations between speakers do exist. Where variations are common, more than one alternative is listed.

 $J\bar{u}$  is replaced by either ju- or ji- ( $U \not v \supset U \supset$ ) followed by a doubled consonant before the voiceless consonants as shown in the table. Ji- is the older form, but it has been replaced by ju- in the speech of recent generations.

Numeral	k- (かきゃ	s/sh- (さし	t/ch-(たち	h- (はひへほひゃ	f- (᠕)	p- (ぱ etc.)	w <sub>-</sub> ( <b>b</b> )	and defendance of the same
Numerai	etc.)	♥ etc.)	や etc.)	ひゅひょ)	1- (つ)	р- (юх есс.)	W- (42)	DOMESTIC STATES

1 ichi	ikk- いっか	iss-いっさ	itt- いった	ipp- いっぱ	ipp- いっぷ	<i>ipp</i> - いっぱ	***************************************
3 san				sanb- さんば	sanp- さん ぷ		sanb-さんば
4				yonh-よんは	yonf-よん ふ		yow- よわ
4 yon	April in commence de la desta de la constanta de la desta de la constanta de la delicita de la constanta del constanta de la constanta de la constanta de la constanta del constanta de la constanta del constanta de la constanta del	· · · · · · · · · · · · · · · · · · ·	1000 A	yonp- よんば	yonp-よん ぷ		yonw- よんわ yonb- よんば
6 roku	rokk- ろっ か			ropp- ろっぱ	ropp- ろっ ぷ	ropp- ろっ ぱ	rokuw- ろくわ ropp- ろっぱ
8 hachi	hakk- はっ か	hass- はっさ	hatt- はった	happ-はっぱ	happ- はっ ぷ	<i>happ-</i> はっぱ	happ- はっぱ hachiw- はちわ
**************************************	jikk- じっか	jiss- じっさ	jitt- じった	jipp- じっぱ	jipp- じっぷ	F	***************************************
10 <i>jū</i>	<i>jukk</i> - じゅ っか	<i>juss-</i> じゅっ さ	jutt- じゆっ た	jupp-じゅっぱ	jupp- じゅ っぷ	<i>jupp-</i> じゅっぱ	jipp₋ じっぱ
100 hyaku	hyakk- ひゃ っか			hyapp- ひゃっぱ	hyapp- ひゃ っぷ	hyapp- ひゃ っぱ	
1000 sen				senb- せんば	senp- せん ぷ		
10000 man				manb- まんば	manp- まん ぷ		
何 nan				nanb- なんば	nanp- なん ぷ	-	

## **Exceptions**

The traditional numbers are used by and for young children to give their ages, instead of using the age counter sai 歳. The kanji is sometimes written using the simpler kanji 才.

Some counters, notably nichi 日 and nin 人, use the traditional numerals for some numbers as shown in the table below. Other uses of traditional numbers are usually restricted to certain phrases, such as hitotsuki 一月 and futatsuki 二月 (one and two months respectively), hitokoto 一言 (a single word) and hitotabi 一度 (once).

Sometimes common numbers that have a derived meaning are written using different kanji. For example, *hitori* (alone) is written 独り, and *futatabi* (once more, another time) is normally written 再び instead of 二度. The counter for months *kagetsu* (derived from kanji 箇月) is commonly written ヶ月.

Nana and shichi are alternatives for 7, yon and shi are alternatives for 4, and  $ky\bar{u}$  and ku are alternatives for 9. Having said that, nana, yon and  $ky\bar{u}$  are more commonly used. Some counters, however, notably nin 人 (people), gatsu 月 (month of the year), ka/nichi 日 (day of the month, days), ji 時 (time of day) and jikan 時間 (hours) take certain alternatives only. These are shown in the table below.

While kai 回 (occurrences) and sen 銭 (0.01 yen, obviously now rarely used) follow the euphonic changes listed above, homophones kai 階 (storeys/floors) and sen 千 (1000) are slightly different as shown below, although these differences are not followed by all speakers. Thus 三階 ("third floor") can be read either sankai or sangai, while 三回 ("three times") can only be read sankai.

Numeral	nichi 日	nin 人	gatsu 月	ji 時	jikan 時間	kai 階	sen Ŧ
1	tsuitachi*	hitori		İ	***************************************		\$ 14-14-19-44-4-4-19-19-19-19-19-19-19-19-19-19-19-19-19-
2	futsuka	futari					
3	mikka				-	sangai	sanzen
4	yokka	yonin***	shigatsu	yoji	yojikan		
5	itsuka	_	The state of the s				
6	muika			***************************************			
7	nanoka	shichinin	shichigatsu	shichiji	shichijikan		
8	yōka						
9	kokonoka	ALCO CONTRACTOR CONTRA	kugatsu	kuji	kujikan		
10	tōka		The state of the second				
14	jūyokka	jūyonin			jūyojikan	1	
20	hatsuka		and the comment of the short of a death markle, a consideration of a	Mark Condition and Control			
24	nijūyokka	nijūyonin			nijūyojikan		
nan 何		**	The second second			nangai	nanzen

<sup>\*</sup> But when counting number of days rather than days of the month, ichinichi is used. Ippi is also heard.

### **Ordinal numbers**

In general, the counter words mentioned above are cardinal numbers, in that they indicate quantity. To transform a counter word into an ordinal number that denotes position in a sequence, *me* (目) is added to the end of the counter. Thus "one time" would be translated as *ikkai* (一回), where as "the first time" would be translated as *ikkaime* (一回目).

This rule is inconsistent, however, as counters without the *me* suffix are often used interchangeably with cardinal and ordinal meanings. For example, *sankai* (三階) can mean both "three floors" and "third floor."

### Periods of time

To express a period of time one may add kan 間 to the following words:  $by\bar{o}$  秒, fun 分, ji 時, nichi 日(and its irregular readings aside from tsuitachi),  $sh\bar{u}$  遇, kagetsu 箇月 and nen 年. Usage varies depending on the word, though. For example, omitting kan in the case of jikan 時間 would be a grave mistake, whereas  $sh\bar{u}kan$  and  $sh\bar{u}$  are both in frequent use. What's more, kagetsukan is rarely heard due to essentially being superfluous, the ka already functioning to express the length.

### See also

- Japanese units
- Measure words
- Chinese measure word

### References

1. ^ "Language Contact and Lexical Innovation" (PDF). Retrieved on 2007-02-14. Table 1. Native Counting in Japanese

Retrieved from "http://en.wikipedia.org/wiki/Japanese\_counter\_word"

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<sup>\*\*</sup> Both ikunin 幾人 and nannin 何人 are used to mean "how many people".

<sup>\*\*\*</sup> In remote rural areas (ie. Northern Honshū and Eastern Hokkaido) older speakers might use yottari.[1]

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